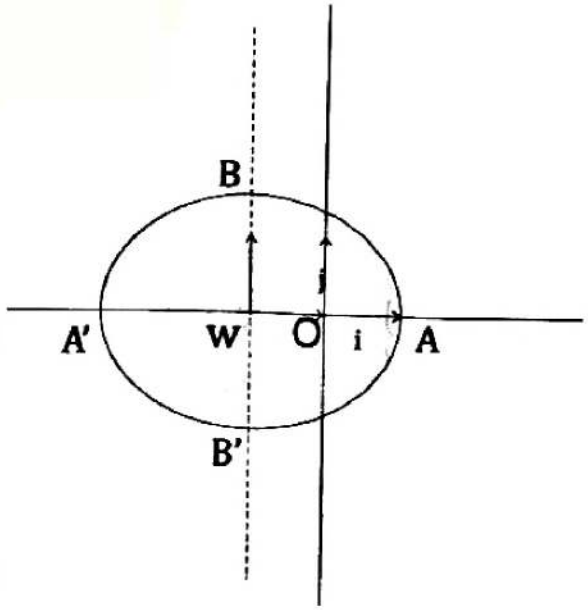

2) $z = z_M = re^{i\theta}$; $M \in (\mathcal{C})$

a) $M(r.cos\theta\,, r.sin\theta)$

$(\mathcal{C})$: $3x^2 + 4y^2 + 6x - 9 = 0$

$(\mathcal{C})$: $4(x^2 + y^2) = x^2 - 6x + 9$

$(\mathcal{C})$: $4(x^2 + y^2) = (x - 3)^2$

$M \in (\mathcal{C}) \implies 4(r^2.cos^2\theta + r^2.sin^2\theta = (r.cos\theta - 3)^2$

$\implies 4r^2 = (3 - r.cos\theta)^2$

$\implies 2r = |3 - r.cos\theta|$ avec $r \leq 3$

D'où $2r = 3 - r.cos\theta \implies r = \frac{3}{2+cos\theta}$

b) $M' = S_O(M)$

$MM' = 2OM = 2r$

$MM' = \dfrac{6}{2 + cos\theta}$

c) $\theta \equiv \pi \quad (2\pi) \rightarrow MM' = 6$

d) $\theta \equiv 0 \quad (2\pi) \rightarrow MM' = 2$

Exercice 15

1) $(\mathcal{C})$: $25(x^2 + y^2) = (3x - 16)^2$

$(\mathcal{C})$: $\dfrac{(x+3)^2}{25} + \dfrac{y^2}{16} = 1$

Qarray.tn -Aqra Blech- Qarray.tn